Interim Design Review – Charge
Beam Separation Dipoles – D3 & D4
13 March 2001
CERN – Room 112-R-018

Background:

The BNL work scope includes the design, development, fabrication, and shipping of the cold D1, D2, D3 and D4 beam separation dipole magnets for the LHC. The D1 and D2 magnets have completed their Production Readiness Reviews and are in full series production. The design engineering effort on the D3 and D4 magnets is underway.

The D3 and D4 magnets were last reviewed in July 1998 as part of the Conceptual Design Review (CDR) of all types of beam separation dipole magnets. An Engineering Design Review (EDR) of the D3 and D4 dipoles will be conducted later in 2001. One or more Production Readiness Reviews (PRRs) will be scheduled after the EDR and before production of the full series begins.

Scope of the Review:

This Interim Design Review (IDR) has been called to review the total scope of design for the D3 and D4 magnets. However, since these magnets have many similarities with the D1 and D2 magnets, those similarities are not expected to be covered in any detail. In particular, the cold mass bodies from end plate to end plate are expected to be virtually identical to the D1 and D2 magnets and will not be covered. This IDR meeting will emphasize design elements that were not fully covered in the reviews of the D1 and D2 magnets. The review will cover the following items in particular:

- Brief summarization of design features and parts known to be identical to those in the D1 and D2 magnets and not requiring further engineering design.
- Brief summarization of all known design features and parts that require further engineering design for the D3 and D4 magnets.
- Review of any completed design elements.
- Status of remaining design efforts.
- Issues related to electro-mechanical design of the end regions.
- Issues related to interconnect and interface design.
- Integration of designs and parts supplied by CERN with the BNL design.

The design review committee has the usual freedom to investigate other areas of the design that present a risk to the successful completion of the project, installation, and operation in the LHC.

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Results of the Review:

This review is expected to improve the understanding of the number and nature of features and parts required for the D3 and D4 magnets. It is also expected to provide an assessment of the complexity of design effort required. The review will be complete with the issuing of a report summarizing the technical designs reviewed, committee recommendations, and action items. The forecast date for completion is 12 April 2001.